

CLAIM AMENDMENTS

1-35. (Cancelled)

1 36. (New) An automated manufacture process test system resident upon a disk drive that
2 performs a manufacture test process on the disk drive once the disk drive is installed and
3 operating within a computer system, the test system comprising:

4 a monitor that determines whether any user command from the computer system is
5 pending or the computer system is idle;

6 a processing module that performs the manufacture test process on a disk of the disk
7 drive, wherein the manufacture test process is performed on a portion of the disk for the first time
8 and in a particular manner depending on whether the computer system has issued the user
9 command or the computer system is idle; and

10 a controller that tracks performance of the manufacture test process such that counters
11 stored in a memory of the disk drive indicate which portion of the disk has been processed by the
12 manufacture test process.

1 37. (New) The system of Claim 36 wherein manufacture test process includes at least one
2 of flaw mapping, embedded runout compensation (ERC) and final drive verification.

1 38. (New) The system of Claim 37 wherein the processing module performs the flaw
2 mapping such that a first flaw mapping test is performed when a user command for operating the
3 disk drive is pending and a second flaw mapping test is performed when the computer is system
4 is idle.

1 39. (New) The system of Claim 38 wherein the first flaw mapping test is performed by
2 identifying logical block addresses (LBAs) on the disk to which information is to be written,
3 determining whether the identified LBAs have been processed, and if the identified LBAs have
4 not been processed, performing a write/verify on each of the LBAs.

1 40. (New) The system of Claim 38 wherein the second flaw mapping test is performed by
2 accessing the memory and identifying an increment of logical block addresses (LBAs) which are
3 unprocessed, performing a write/verify on each of the LBAs in the increment, and updating the
4 memory to indicate which of the LBAs have been processed.

1 41. (New) The system of Claim 37 wherein the processing module performs the ERC
2 when the computer system is idle by accessing the memory to determine which cylinder was last
3 processed, performing the ERC on the next cylinder, and updating the memory to indicate
4 completion of the ERC on the next cylinder.

1 42. (New) The system of Claim 37 wherein the processing module performs the final
2 drive verification such that a first final drive verification test is performed when a user command
3 for operating the disk drive is pending and a second final drive verification test is performed
4 when the computer system is idle.

1 43. (New) The system of Claim 42 wherein the first final drive verification test is
2 performed by identifying logical block addresses (LBAs) on the disk to which information is to
3 be written, determining whether the identified LBAs have been processed, and if the identified
4 LBAs have not been processed, performing a write/verify on each of the LBAs.

1 44. (New) The system of Claim 42 wherein the second final drive verification test is
2 performed by accessing the memory and identifying an increment of logical block addresses
3 (LBAs) which are unprocessed, performing a write/verify on each of the LBAs in the increment,
4 and updating the memory to indicate which of the LBAs have been processed.

1 45. (New) The system of Claim 36 wherein a predetermined portion of the disk is
2 processed by the manufacture test process before installation of the disk drive in the computer
3 system, and the portion of the disk drive which has been processed is identified by the controller.

1 46. (New) The system of Claim 45 wherein any major flaw in the disk is detected before
2 the disk drive is installed in the computer system.

1 47. (New) The system of Claim 45 wherein the disk includes concentric tracks and the
2 predetermined portion includes a predetermined percentage of the tracks as well as every Nth of
3 the tracks.

1 48. (New) A method of performing a manufacture test process for a disk drive,
2 comprising:
3 installing the disk drive in a computer system and employing the disk drive for operations
4 of the computer system after the disk drive leaves a factory; then
5 detecting a predetermined condition in the computer system;
6 performing a manufacture test process on a particular area of a disk of the disk drive for
7 the first time in response to the detected condition, wherein the manufacture test process is
8 performed in accordance with information stored in a memory of the disk drive which indicates
9 where the manufacture test process shall begin and end, and the manufacture test process corrects
10 errors detected on the disk; and
11 updating the memory to indicate upon which portions of the disk the manufacture test
12 process has been performed.

1 49. (New) The method of Claim 48 wherein the manufacture test process includes at least
2 one of flaw mapping, embedded runout compensation (ERC) and final drive verification.

1 50. (New) The method of Claim 49 wherein the detected condition includes a user
2 command pending from the computer system and the computer system is idle.

1 51. (New) The method of Claim 50 wherein the flaw mapping includes:
2 determining the detected condition for the computer system;
3 if the user command is pending, before performing the user command:

4 identifying logical block addresses (LBAs) employed as part of performing the
5 user command;
6 accessing the memory to determine if the identified logical block addresses have
7 been previously processed;
8 if any of the LBAs are unprocessed, performing a write/verify on each of the
9 unprocessed LBAs and reassigning any of the unprocessed LBAs which fail the write/verify; and
10 updating the memory to indicate which of the unprocessed LBAs have been
11 processed;
12 if the computer system is idle:
13 accessing the memory and identifying a next increment of LBAs to process;
14 performing the write/verify on each of the LBAs in the increment;
15 reassigning the LBAs in the increment which fail the write/verify; and
16 updating the memory to indicate that the LBAs in the increment have been
17 processed.

1 52. (New) The method of Claim 49 wherein the ERC includes:
2 determining the detected condition for the computer system; and
3 if the computer system is idle:
4 accessing the memory and identifying a next cylinder to process;
5 performing the ERC on the next cylinder, and storing in the memory any
6 generated error values; and
7 updating the memory to indicate that the next cylinder has been processed.

1 53. (New) The method of Claim 49 wherein the final drive verification includes:
2 determining the detected condition for the computer system;
3 if the user command is pending, before performing the user command:
4 identifying logical block addresses (LBAs) employed as part of performing the
5 user command;
6 accessing the memory to determine if the identified logical block addresses have
7 been previously processed;

8 if any of the LBAs are unprocessed, performing a write/verify on each of the
9 unprocessed LBAs and reassigning any of the unprocessed LBAs which fail the write/verify; and
10 updating the memory to indicate which of the unprocessed LBAs have been
11 processed;
12 if the computer system is idle:
13 accessing the memory and identifying a next increment of LBAs to process;
14 performing the read/verify on each of the LBAs in the increment;
15 reassigning the LBAs in the increment which fail the read/verify; and
16 updating the memory to indicate that the LBAs in the increment have been
17 processed.

1 54. (New) The method of Claim 48 including performing the manufacture test process
2 prior to installation of the disk drive in the computer system to identify a major flaw on the disk.

1 55. (New) The method of Claim 48 wherein a program for performing the manufacturing
2 test process is placed in the memory before installing the disk drive in the computer system.

1 56. (New) The method of Claim 54 wherein the disk includes concentric tracks and
2 performing the manufacture test process prior to installation of the disk drive in the computer
3 system includes testing a predetermined percentage of the tracks as well as every Nth track of the
4 tracks.

1 57. (New) A disk drive, comprising:
2 a disk with spaced tracks for storing information;
3 a head that reads and writes information to and from the disk;
4 a memory;
5 a processing module stored in the memory that performs a manufacture test process on
6 the disk while the disk drive is installed and operating in a computer system; and

7 a controller that executes the manufacture test process on a portion of the disk for the first
8 time in response to a predetermined condition of the computer system configured to control
9 operation of the head when the computer system is idle.

1 58. (New) The disk drive of Claim 57 wherein the memory is a read only memory
2 (ROM).

1 59. (New) The disk drive of Claim 57 wherein the memory is a processed area of the disk.

1 60. (New) The disk drive of Claim 57 wherein the manufacture test process includes at
2 least one of flaw mapping, embedded runout compensation (ERC) and final drive verification.

1 61. (New) The disk drive of Claim 60 wherein the processing module performs the flaw
2 mapping such that a first flaw mapping test is performed when a user command for operating the
3 disk drive is pending and a second flaw mapping test is performed when the computer system is
4 idle.

1 62. (New) The disk drive of Claim 61 wherein the first flaw mapping test is performed by
2 identifying logical block addresses (LBAs) on the disk, determining whether the identified LBAs
3 have been processed, and if the identified LBAs have not been processed, performing a
4 write/verify on each of the LBAs.

1 63. (New) The disk drive of Claim 61 wherein the second flaw mapping test is performed
2 by accessing the memory and identifying an increment of logical block addresses (LBAs) which
3 are unprocessed, performing a write/verify on each of the LBAs in the increment, and updating
4 the memory to indicate which of the LBAs have been processed.

1 64. (New) The disk drive of Claim 60 wherein the processing module performs the ERC
2 when the computer system is idle by accessing the memory to determine which cylinder was last

3 processed, performing the ERC on the next cylinder, and updating the memory to indicate
4 completion of the ERC on the next cylinder.

1 65. (New) The disk drive of Claim 60 wherein the processing module performs the final
2 drive verification such that a first final drive verification test is performed when a user command
3 for operating the disk drive is pending and a second final drive verification test when the
4 computer system is idle.

1 66. (New) The disk drive of Claim 65 wherein the first final drive verification test is
2 performed by identifying logical block addresses (LBAs) on the disk to which information is to
3 be written, determining whether the identified LBAs have been processed, and if the identified
4 LBAs have not been processed, performing a write/verify on each of the LBAs.

1 67. (New) The disk drive of Claim 65 wherein the second final drive verification test is
2 performed by accessing memory and identifying an increment of logical block addresses (LBAs)
3 which are unprocessed, performing a write/verify on each of the LBAs in the increment, and
4 updating the memory to indicate which of the LBAs have been processed.

1 68. (New) The disk drive of Claim 48 wherein the disk drive performs the manufacture
2 test process on a predetermined portion of the disk before the disk drive is installed in the
3 computer system.

1 69. (New) The disk drive of Claim 68 wherein the disk drive detects any major flaws in
2 the disk before the disk drive is installed in the computer system.

1 70. (New) The disk drive of Claim 68 wherein the predetermined portion includes a
2 predetermined percentage of the tracks as well as every Nth of the tracks.

1 71. (New) A disk drive, comprising:
2 a disk that includes spaced tracks for storing information;

3 a head that reads and writes information to and from the disk; and
4 a controller that executes a manufacture test process stored in the disk drive (1) on a first
5 portion of the disk and not a second portion of the disk while the disk drive is manufactured at a
6 factory and before the disk drive is installed and operating in a computer system, and (2) on the
7 second portion of the disk for the first time after the disk drive is manufactured at the factory and
8 while the disk drive is installed and operating in the computer system.

1 72. (New) The disk drive of Claim 71 wherein the manufacture test process includes at
2 least one of flaw mapping, embedded runout compensation (ERC) and final drive verification.

1 73. (New) The disk drive of Claim 71 wherein the manufacture test process includes the
2 flaw mapping.

1 74. (New) The disk drive of Claim 73 wherein the controller executes the flaw mapping
2 on the second portion of the disk such that a first flaw mapping test is performed when a user
3 command for operating the disk drive is pending and a second flaw mapping test is performed
4 when the computer system is idle.

1 75. (New) The disk drive of Claim 74 wherein the first flaw mapping test is performed by
2 identifying logical block addresses (LBAs) on the disk, determining whether the identified LBAs
3 have been processed, and if the identified LBAs have not been processed, performing a
4 write/verify on each of the LBAs.

1 76. (New) The disk drive of Claim 74 wherein the second flaw mapping test is performed
2 by identifying an increment of logical block addresses (LBAs) which are unprocessed,
3 performing a write/verify on each of the LBAs in the increment, and updating which of the LBAs
4 have been processed.

1 77. (New) The disk drive of Claim 74 wherein:

2 the first flaw mapping test is performed by identifying logical block addresses (LBAs) on
3 the disk, determining whether the identified LBAs have been processed, and if the identified
4 LBAs have not been processed, performing a write/verify on each of the LBAs; and

5 the second flaw mapping test is performed by identifying an increment of logical block
6 addresses (LBAs) which are unprocessed, performing a write/verify on each of the LBAs in the
7 increment, and indicating which of the LBAs have been processed.

1 78. (New) The disk drive of Claim 71 wherein the manufacture test process includes the
2 ERC.

1 79. (New) The disk drive of Claim 78 wherein the controller executes the ERC by
2 determining which cylinder was last processed, performing the ERC on the next cylinder, and
3 indicating completion of the ERC on the next cylinder.

1 80. (New) The disk drive of Claim 71 wherein the manufacture test process includes the
2 final drive verification.

1 81. (New) The disk drive of Claim 80 wherein the controller executes the final drive
2 verification such that a first final drive verification test is performed when a user command for
3 operating the disk drive is pending and a second final drive verification test when the computer
4 system is idle.

1 82. (New) The disk drive of Claim 81 wherein the first final drive verification test is
2 performed by identifying logical block addresses (LBAs) on the disk to which information is to
3 be written, determining whether the identified LBAs have been processed, and if the identified
4 LBAs have not been processed, performing a write/verify on each of the LBAs.

1 83. (New) The disk drive of Claim 81 wherein the second final drive verification test is
2 performed by identifying an increment of logical block addresses (LBAs) which are unprocessed,

3 performing a write/verify on each of the LBAs in the increment, and indicating which of the
4 LBAs have been processed.

1 84. (New) The disk drive of Claim 81 wherein:
2 the first final drive verification test is performed by identifying logical block addresses
3 (LBAs) on the disk to which information is to be written, determining whether the identified
4 LBAs have been processed, and if the identified LBAs have not been processed, performing a
5 write/verify on each of the LBAs; and
6 the second final drive verification test is performed by identifying an increment of logical
7 block addresses (LBAs) which are unprocessed, performing a write/verify on each of the LBAs in
8 the increment, and indicating which of the LBAs have been processed.

1 85. (New) The disk drive of Claim 71 wherein the controller executes the manufacture
2 test process on the first portion of the disk such that any major flaws in the disk are detected.

1 86. (New) The disk drive of Claim 71 wherein the first portion of the disk includes a
2 predetermined percentage of the tracks as well as every Nth of the tracks.

1 87. (New) The disk drive of Claim 71 wherein the manufacture test process is stored in a
2 random access memory (RAM) in the disk drive.

1 88. (New) The disk drive of Claim 71 wherein the manufacture test process is stored in a
2 read only memory (ROM) in the disk drive.

1 89. (New) The disk drive of Claim 71 wherein the manufacture test process is stored in
2 the first portion of the disk.

1 90. (New) The disk drive of Claim 71 wherein the first portion of the disk is smaller than
2 the second portion of the disk.

1 91. (New) A disk drive, comprising:
2 a disk with spaced tracks for storing information;
3 a head that reads and writes information to and from the disk; and
4 a controller that executes a manufacture test process stored in the disk drive (1) on a first
5 portion of the disk and not a second portion of the disk while the disk drive is manufactured at a
6 factory and before the disk drive is delivered from the factory and installed and operating in a
7 computer system, and (2) on the second portion of the disk for the first time after the disk drive is
8 manufactured at and delivered from the factory and while the disk drive is installed and operating
9 in the computer system, thereby reducing manufacturing time for the disk drive at the factory.

1 92. (New) The disk drive of Claim 91 wherein the manufacture test process includes at
2 least one of flaw mapping, embedded runout compensation (ERC) and final drive verification.

1 93. (New) The disk drive of Claim 91 wherein the manufacture test process includes the
2 flaw mapping.

1 94. (New) The disk drive of Claim 93 wherein the controller executes the flaw mapping
2 on the second portion of the disk such that a first flaw mapping test is performed when a user
3 command for operating the disk drive is pending and a second flaw mapping test is performed
4 when the computer system is idle.

1 95. (New) The disk drive of Claim 94 wherein the first flaw mapping test is performed by
2 identifying logical block addresses (LBAs) on the disk, determining whether the identified LBAs
3 have been processed, and if the identified LBAs have not been processed, performing a
4 write/verify on each of the LBAs.

1 96. (New) The disk drive of Claim 94 wherein the second flaw mapping test is performed
2 by identifying an increment of logical block addresses (LBAs) which are unprocessed,
3 performing a write/verify on each of the LBAs in the increment, and updating which of the LBAs
4 have been processed.

1 97. (New) The disk drive of Claim 94 wherein:
2 the first flaw mapping test is performed by identifying logical block addresses (LBAs) on
3 the disk, determining whether the identified LBAs have been processed, and if the identified
4 LBAs have not been processed, performing a write/verify on each of the LBAs; and
5 the second flaw mapping test is performed by identifying an increment of logical block
6 addresses (LBAs) which are unprocessed, performing a write/verify on each of the LBAs in the
7 increment, and indicating which of the LBAs have been processed.

1 98. (New) The disk drive of Claim 91 wherein the manufacture test process includes the
2 ERC.

1 99. (New) The disk drive of Claim 98 wherein the controller executes the ERC by
2 determining which cylinder was last processed, performing the ERC on the next cylinder, and
3 indicating completion of the ERC on the next cylinder.

1 100. (New) The disk drive of Claim 91 wherein the manufacture test process includes the
2 final drive verification.

1 101. (New) The disk drive of Claim 100 wherein the controller executes the final drive
2 verification such that a first final drive verification test is performed when a user command for
3 operating the disk drive is pending and a second final drive verification test when the computer
4 system is idle.

1 102. (New) The disk drive of Claim 101 wherein the first final drive verification test is
2 performed by identifying logical block addresses (LBAs) on the disk to which information is to
3 be written, determining whether the identified LBAs have been processed, and if the identified
4 LBAs have not been processed, performing a write/verify on each of the LBAs.

1 103. (New) The disk drive of Claim 101 wherein the second final drive verification test is
2 performed by identifying an increment of logical block addresses (LBAs) which are unprocessed,
3 performing a write/verify on each of the LBAs in the increment, and indicating which of the
4 LBAs have been processed.

1 104. (New) The disk drive of Claim 101 wherein:
2 the first final drive verification test is performed by identifying logical block addresses
3 (LBAs) on the disk to which information is to be written, determining whether the identified
4 LBAs have been processed, and if the identified LBAs have not been processed, performing a
5 write/verify on each of the LBAs; and
6 the second final drive verification test is performed by identifying an increment of logical
7 block addresses (LBAs) which are unprocessed, performing a write/verify on each of the LBAs in
8 the increment, and indicating which of the LBAs have been processed.

1 105. (New) The disk drive of Claim 91 wherein the controller executes the manufacture
2 test process on the first portion of the disk such that any major flaws in the disk are detected.

1 106. (New) The disk drive of Claim 91 wherein the first portion of the disk includes a
2 predetermined percentage of the tracks as well as every Nth of the tracks.

1 107. (New) The disk drive of Claim 91 wherein the manufacture test process is stored in a
2 random access memory (RAM) in the disk drive.

1 108. (New) The disk drive of Claim 91 wherein the manufacture test process is stored in a
2 read only memory (ROM) in the disk drive.

1 109. (New) The disk drive of Claim 91 wherein the manufacture test process is stored in
2 the first portion of the disk.

1 110. (New) The disk drive of Claim 91 wherein the first portion of the disk is smaller
2 than the second portion of the disk.

1 111. (New) A disk drive, comprising:
2 a disk with spaced tracks for storing information;
3 a head that reads and writes information to and from the disk;
4 a controller that executes a manufacture test process stored in the disk drive (1) on a first
5 portion of the disk and not a second portion of the disk using the head while the disk drive is
6 manufactured at a factory and before the disk drive is installed and operating in a computer
7 system, and (2) on the second portion of the disk for the first time using the head after the disk
8 drive is manufactured at the factory and while the disk drive is installed and operating in the
9 computer system.

1 112. (New) The disk drive of Claim 111 wherein the manufacture test process includes at
2 least one of flaw mapping, embedded runout compensation (ERC) and final drive verification.

1 113. (New) The disk drive of Claim 111 wherein the manufacture test process includes
2 the flaw mapping.

1 114. (New) The disk drive of Claim 113 wherein the controller executes the flaw
2 mapping on the second portion of the disk such that a first flaw mapping test is performed when
3 a user command for operating the disk drive is pending and a second flaw mapping test is
4 performed when the computer system is idle.

1 115. (New) The disk drive of Claim 114 wherein the first flaw mapping test is performed
2 by identifying logical block addresses (LBAs) on the disk, determining whether the identified
3 LBAs have been processed, and if the identified LBAs have not been processed, performing a
4 write/verify on each of the LBAs.

1 116. (New) The disk drive of Claim 114 wherein the second flaw mapping test is
2 performed by identifying an increment of logical block addresses (LBAs) which are unprocessed,
3 performing a write/verify on each of the LBAs in the increment, and updating which of the LBAs
4 have been processed.

1 117. (New) The disk drive of Claim 114 wherein:
2 the first flaw mapping test is performed by identifying logical block addresses (LBAs) on
3 the disk, determining whether the identified LBAs have been processed, and if the identified
4 LBAs have not been processed, performing a write/verify on each of the LBAs; and
5 the second flaw mapping test is performed by identifying an increment of logical block
6 addresses (LBAs) which are unprocessed, performing a write/verify on each of the LBAs in the
7 increment, and indicating which of the LBAs have been processed.

1 118. (New) The disk drive of Claim 111 wherein the manufacture test process includes
2 the ERC.

1 119. (New) The disk drive of Claim 118 wherein the controller executes the ERC by
2 determining which cylinder was last processed, performing the ERC on the next cylinder, and
3 indicating completion of the ERC on the next cylinder.

1 120. (New) The disk drive of Claim 111 wherein the manufacture test process includes
2 the final drive verification.

1 121. (New) The disk drive of Claim 120 wherein the controller executes the final drive
2 verification such that a first final drive verification test is performed when a user command for
3 operating the disk drive is pending and a second final drive verification test when the computer
4 system is idle.

1 122. (New) The disk drive of Claim 121 wherein the first final drive verification test is
2 performed by identifying logical block addresses (LBAs) on the disk to which information is to

3 be written, determining whether the identified LBAs have been processed, and if the identified
4 LBAs have not been processed, performing a write/verify on each of the LBAs.

1 123. (New) The disk drive of Claim 121 wherein the second final drive verification test is
2 performed by identifying an increment of logical block addresses (LBAs) which are unprocessed,
3 performing a write/verify on each of the LBAs in the increment, and indicating which of the
4 LBAs have been processed.

1 124. (New) The disk drive of Claim 121 wherein:
2 the first final drive verification test is performed by identifying logical block addresses
3 (LBAs) on the disk to which information is to be written, determining whether the identified
4 LBAs have been processed, and if the identified LBAs have not been processed, performing a
5 write/verify on each of the LBAs; and
6 the second final drive verification test is performed by identifying an increment of logical
7 block addresses (LBAs) which are unprocessed, performing a write/verify on each of the LBAs in
8 the increment, and indicating which of the LBAs have been processed.

1 125. (New) The disk drive of Claim 111 wherein the controller executes the manufacture
2 test process on the first portion of the disk such that any major flaws in the disk are detected.

1 126. (New) The disk drive of Claim 111 wherein the first portion of the disk includes a
2 predetermined percentage of the tracks as well as every Nth of the tracks.

1 127. (New) The disk drive of Claim 111 wherein the manufacture test process is stored in
2 a random access memory (RAM) in the disk drive.

1 128. (New) The disk drive of Claim 111 wherein the manufacture test process is stored in
2 a read only memory (ROM) in the disk drive.

1 129. (New) The disk drive of Claim 111 wherein the manufacture test process is stored in
2 the first portion of the disk.

1 130. (New) The disk drive of Claim 111 wherein the first portion of the disk is smaller
2 than the second portion of the disk.

1 131. (New) A disk drive, comprising:
2 a disk that includes spaced tracks for storing information;
3 a head that reads and writes information to and from the disk; and
4 a controller that executes a manufacture test process stored in the disk drive (1) on a first
5 portion of the disk and not a second portion of the disk while the disk drive is manufactured at a
6 factory and before the disk drive is installed and operating in a computer system, and (2) on the
7 second portion of the disk for the first time in response to automatic initiation by the disk drive
8 after the disk drive is manufactured at the factory and while the disk drive is installed and
9 operating in the computer system.

1 132. (New) The disk drive of Claim 131 wherein the manufacture test process includes at
2 least one of flaw mapping, embedded runout compensation (ERC) and final drive verification.

1 133. (New) The disk drive of Claim 131 wherein the manufacture test process includes
2 the flaw mapping.

1 134. (New) The disk drive of Claim 133 wherein the controller executes the flaw
2 mapping on the second portion of the disk such that a first flaw mapping test is performed when
3 a user command for operating the disk drive is pending and a second flaw mapping test is
4 performed when the computer system is idle.

1 135. (New) The disk drive of Claim 134 wherein the first flaw mapping test is performed
2 by identifying logical block addresses (LBAs) on the disk, determining whether the identified

3 LBAs have been processed, and if the identified LBAs have not been processed, performing a
4 write/verify on each of the LBAs.

1 136. (New) The disk drive of Claim 134 wherein the second flaw mapping test is
2 performed by identifying an increment of logical block addresses (LBAs) which are unprocessed,
3 performing a write/verify on each of the LBAs in the increment, and updating which of the LBAs
4 have been processed.

1 137. (New) The disk drive of Claim 134 wherein:
2 the first flaw mapping test is performed by identifying logical block addresses (LBAs) on
3 the disk, determining whether the identified LBAs have been processed, and if the identified
4 LBAs have not been processed, performing a write/verify on each of the LBAs; and
5 the second flaw mapping test is performed by identifying an increment of logical block
6 addresses (LBAs) which are unprocessed, performing a write/verify on each of the LBAs in the
7 increment, and indicating which of the LBAs have been processed.

1 138. (New) The disk drive of Claim 131 wherein the manufacture test process includes
2 the ERC.

1 139. (New) The disk drive of Claim 138 wherein the controller executes the ERC by
2 determining which cylinder was last processed, performing the ERC on the next cylinder, and
3 indicating completion of the ERC on the next cylinder.

1 140. (New) The disk drive of Claim 131 wherein the manufacture test process includes
2 the final drive verification.

1 141. (New) The disk drive of Claim 140 wherein the controller executes the final drive
2 verification such that a first final drive verification test is performed when a user command for
3 operating the disk drive is pending and a second final drive verification test when the computer
4 system is idle.

1 142. (New) The disk drive of Claim 141 wherein the first final drive verification test is
2 performed by identifying logical block addresses (LBAs) on the disk to which information is to
3 be written, determining whether the identified LBAs have been processed, and if the identified
4 LBAs have not been processed, performing a write/verify on each of the LBAs.

1 143. (New) The disk drive of Claim 141 wherein the second final drive verification test is
2 performed by identifying an increment of logical block addresses (LBAs) which are unprocessed,
3 performing a write/verify on each of the LBAs in the increment, and indicating which of the
4 LBAs have been processed.

1 144. (New) The disk drive of Claim 141 wherein:
2 the first final drive verification test is performed by identifying logical block addresses
3 (LBAs) on the disk to which information is to be written, determining whether the identified
4 LBAs have been processed, and if the identified LBAs have not been processed, performing a
5 write/verify on each of the LBAs; and
6 the second final drive verification test is performed by identifying an increment of logical
7 block addresses (LBAs) which are unprocessed, performing a write/verify on each of the LBAs in
8 the increment, and indicating which of the LBAs have been processed.

1 145. (New) The disk drive of Claim 131 wherein the controller executes the manufacture
2 test process on the first portion of the disk such that any major flaws in the disk are detected.

1 146. (New) The disk drive of Claim 131 wherein the first portion of the disk includes a
2 predetermined percentage of the tracks as well as every Nth of the tracks.

1 147. (New) The disk drive of Claim 131 wherein the manufacture test process is stored in
2 a random access memory (RAM) in the disk drive.

1 148. (New) The disk drive of Claim 131 wherein the manufacture test process is stored in
2 a read only memory (ROM) in the disk drive.

1 149. (New) The disk drive of Claim 131 wherein the manufacture test process is stored in
2 the first portion of the disk.

1 150. (New) The disk drive of Claim 131 wherein the first portion of the disk is smaller
2 than the second portion of the disk.

1 151. (New) A disk drive, comprising:
2 a disk with spaced tracks for storing information;
3 a head that reads and writes information to and from the disk; and
4 a controller that executes a manufacture test process stored in the disk drive (1) on a first
5 portion of the disk and not a second portion of the disk while the disk drive is manufactured at a
6 factory and before the disk drive is delivered from the factory and installed and operating in a
7 computer system, and (2) on the second portion of the disk for the first time in response to
8 automatic initiation by the disk drive after the disk drive is manufactured at and delivered from
9 the factory and while the disk drive is installed and operating in the computer system, thereby
10 reducing manufacturing time for the disk drive at the factory.

1 152. (New) The disk drive of Claim 151 wherein the manufacture test process includes at
2 least one of flaw mapping, embedded runout compensation (ERC) and final drive verification.

1 153. (New) The disk drive of Claim 151 wherein the manufacture test process includes
2 the flaw mapping.

1 154. (New) The disk drive of Claim 153 wherein the controller executes the flaw
2 mapping on the second portion of the disk such that a first flaw mapping test is performed when
3 a user command for operating the disk drive is pending and a second flaw mapping test is
4 performed when the computer system is idle.

1 155. (New) The disk drive of Claim 154 wherein the first flaw mapping test is performed
2 by identifying logical block addresses (LBAs) on the disk, determining whether the identified
3 LBAs have been processed, and if the identified LBAs have not been processed, performing a
4 write/verify on each of the LBAs.

1 156. (New) The disk drive of Claim 154 wherein the second flaw mapping test is
2 performed by identifying an increment of logical block addresses (LBAs) which are unprocessed,
3 performing a write/verify on each of the LBAs in the increment, and updating which of the LBAs
4 have been processed.

1 157. (New) The disk drive of Claim 154 wherein:
2 the first flaw mapping test is performed by identifying logical block addresses (LBAs) on
3 the disk, determining whether the identified LBAs have been processed, and if the identified
4 LBAs have not been processed, performing a write/verify on each of the LBAs; and
5 the second flaw mapping test is performed by identifying an increment of logical block
6 addresses (LBAs) which are unprocessed, performing a write/verify on each of the LBAs in the
7 increment, and indicating which of the LBAs have been processed.

1 158. (New) The disk drive of Claim 151 wherein the manufacture test process includes
2 the ERC.

1 159. (New) The disk drive of Claim 158 wherein the controller executes the ERC by
2 determining which cylinder was last processed, performing the ERC on the next cylinder, and
3 indicating completion of the ERC on the next cylinder.

1 160. (New) The disk drive of Claim 151 wherein the manufacture test process includes
2 the final drive verification.

1 161. (New) The disk drive of Claim 160 wherein the controller executes the final drive
2 verification such that a first final drive verification test is performed when a user command for
3 operating the disk drive is pending and a second final drive verification test when the computer
4 system is idle.

1 162. (New) The disk drive of Claim 161 wherein the first final drive verification test is
2 performed by identifying logical block addresses (LBAs) on the disk to which information is to
3 be written, determining whether the identified LBAs have been processed, and if the identified
4 LBAs have not been processed, performing a write/verify on each of the LBAs.

1 163. (New) The disk drive of Claim 161 wherein the second final drive verification test is
2 performed by identifying an increment of logical block addresses (LBAs) which are unprocessed,
3 performing a write/verify on each of the LBAs in the increment, and indicating which of the
4 LBAs have been processed.

1 164. (New) The disk drive of Claim 161 wherein:
2 the first final drive verification test is performed by identifying logical block addresses
3 (LBAs) on the disk to which information is to be written, determining whether the identified
4 LBAs have been processed, and if the identified LBAs have not been processed, performing a
5 write/verify on each of the LBAs; and
6 the second final drive verification test is performed by identifying an increment of logical
7 block addresses (LBAs) which are unprocessed, performing a write/verify on each of the LBAs in
8 the increment, and indicating which of the LBAs have been processed.

1 165. (New) The disk drive of Claim 151 wherein the controller executes the manufacture
2 test process on the first portion of the disk such that any major flaws in the disk are detected.

1 166. (New) The disk drive of Claim 151 wherein the first portion of the disk includes a
2 predetermined percentage of the tracks as well as every Nth of the tracks.

1 167. (New) The disk drive of Claim 151 wherein the manufacture test process is stored in
2 a random access memory (RAM) in the disk drive.

1 168. (New) The disk drive of Claim 151 wherein the manufacture test process is stored in
2 a read only memory (ROM) in the disk drive.

1 169. (New) The disk drive of Claim 151 wherein the manufacture test process is stored in
2 the first portion of the disk.

1 170. (New) The disk drive of Claim 151 wherein the first portion of the disk is smaller
2 than the second portion of the disk.

1 171. (New) A disk drive, comprising:
2 a disk with spaced tracks for storing information;
3 a head that reads and writes information to and from the disk;
4 a controller that executes a manufacture test process stored in the disk drive (1) on a first
5 portion of the disk and not a second portion of the disk using the head while the disk drive is
6 manufactured at a factory and before the disk drive is installed and operating in a computer
7 system, and (2) on the second portion of the disk for the first time using the head in response to
8 automatic initiation by the disk drive after the disk drive is manufactured at the factory and while
9 the disk drive is installed and operating in the computer system.

1 172. (New) The disk drive of Claim 171 wherein the manufacture test process includes at
2 least one of flaw mapping, embedded runout compensation (ERC) and final drive verification.

1 173. (New) The disk drive of Claim 171 wherein the manufacture test process includes
2 the flaw mapping.

1 174. (New) The disk drive of Claim 173 wherein the controller executes the flaw
2 mapping on the second portion of the disk such that a first flaw mapping test is performed when

3 a user command for operating the disk drive is pending and a second flaw mapping test is
4 performed when the computer system is idle.

1 175. (New) The disk drive of Claim 174 wherein the first flaw mapping test is performed
2 by identifying logical block addresses (LBAs) on the disk, determining whether the identified
3 LBAs have been processed, and if the identified LBAs have not been processed, performing a
4 write/verify on each of the LBAs.

1 176. (New) The disk drive of Claim 174 wherein the second flaw mapping test is
2 performed by identifying an increment of logical block addresses (LBAs) which are unprocessed,
3 performing a write/verify on each of the LBAs in the increment, and updating which of the LBAs
4 have been processed.

1 177. (New) The disk drive of Claim 174 wherein:
2 the first flaw mapping test is performed by identifying logical block addresses (LBAs) on
3 the disk, determining whether the identified LBAs have been processed, and if the identified
4 LBAs have not been processed, performing a write/verify on each of the LBAs; and
5 the second flaw mapping test is performed by identifying an increment of logical block
6 addresses (LBAs) which are unprocessed, performing a write/verify on each of the LBAs in the
7 increment, and indicating which of the LBAs have been processed.

1 178. (New) The disk drive of Claim 171 wherein the manufacture test process includes
2 the ERC.

1 179. (New) The disk drive of Claim 178 wherein the controller executes the ERC by
2 determining which cylinder was last processed, performing the ERC on the next cylinder, and
3 indicating completion of the ERC on the next cylinder.

1 180. (New) The disk drive of Claim 171 wherein the manufacture test process includes
2 the final drive verification.

1 181. (New) The disk drive of Claim 180 wherein the controller executes the final drive
2 verification such that a first final drive verification test is performed when a user command for
3 operating the disk drive is pending and a second final drive verification test when the computer
4 system is idle.

1 182. (New) The disk drive of Claim 181 wherein the first final drive verification test is
2 performed by identifying logical block addresses (LBAs) on the disk to which information is to
3 be written, determining whether the identified LBAs have been processed, and if the identified
4 LBAs have not been processed, performing a write/verify on each of the LBAs.

1 183. (New) The disk drive of Claim 181 wherein the second final drive verification test is
2 performed by identifying an increment of logical block addresses (LBAs) which are unprocessed,
3 performing a write/verify on each of the LBAs in the increment, and indicating which of the
4 LBAs have been processed.

1 184. (New) The disk drive of Claim 181 wherein:
2 the first final drive verification test is performed by identifying logical block addresses
3 (LBAs) on the disk to which information is to be written, determining whether the identified
4 LBAs have been processed, and if the identified LBAs have not been processed, performing a
5 write/verify on each of the LBAs; and
6 the second final drive verification test is performed by identifying an increment of logical
7 block addresses (LBAs) which are unprocessed, performing a write/verify on each of the LBAs in
8 the increment, and indicating which of the LBAs have been processed.

1 185. (New) The disk drive of Claim 171 wherein the controller executes the manufacture
2 test process on the first portion of the disk such that any major flaws in the disk are detected.

1 186. (New) The disk drive of Claim 171 wherein the first portion of the disk includes a
2 predetermined percentage of the tracks as well as every Nth of the tracks.

1 187. (New) The disk drive of Claim 171 wherein the manufacture test process is stored in
2 a random access memory (RAM) in the disk drive.

1 188. (New) The disk drive of Claim 171 wherein the manufacture test process is stored in
2 a read only memory (ROM) in the disk drive.

1 189. (New) The disk drive of Claim 171 wherein the manufacture test process is stored in
2 the first portion of the disk.

1 190. (New) The disk drive of Claim 171 wherein the first portion of the disk is smaller
2 than the second portion of the disk.